

What is claimed is

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- 1 1. A golf club head comprising:  
2 a cast head body constituted by a hollow outer shell;  
3 said hollow outer shell defining a top portion, a sole  
4 portion, a heel wall and a toe portion;  
5 a shaft securing portion formed adjacent to said heel wall  
6 and extended from said top portion to said sole portion; and  
7 a first hollow portion formed between said shaft securing  
8 portion and said heel wall of said head body.
- 1 2. A golf club head according to claim 1, wherein said hollow  
2 outer shell defines a face opening portion, a face portion is  
3 fixed to said face opening portion.
- 1 3. A golf club head according to claim 2, wherein a second  
2 hollow portion is formed between said shaft securing portion  
3 and said face portion.
- 1 4. A golf club head according to claim 2, wherein said face  
2 portion is formed by forging.
- 1 5. A golf club head according to claim 2, wherein said face  
2 portion is formed by press working of a rolled plate member.

1 6. A golf club head according to claim 1, wherein a shaft  
2 securing hole penetrates said shaft securing portion in a region  
3 from said top portion to said sole portion.

1 7. A golf club head according to claim 1, wherein said shaft  
2 securing hole of said shaft securing portion has a bottom  
3 portion.

1 8. A golf club head according to claim 7, wherein said bottom  
2 portion is formed in a same surface of said sole portion of  
3 said head body.

1 9. A golf club head according to claim 7, wherein said bottom  
2 portion of said shaft securing hole has substantially the same  
3 thickness as the thickness of said sole portion.

1 10. A golf club head according to claim 1, wherein said hollow  
2 outer shell and said shaft securing portion are integrally  
3 molded with each other by precise casting.

1 11. A golf club head according to claim 1, wherein said shaft  
2 securing portion is formed into a cylindrical shape from said  
3 top portion to said sole portion.

1 12. A golf club head according to claim 1, wherein said first  
2 hollow portion is formed such that a clearance of 1 mm to 10

3 mm is defined between said shaft securing portion and said heel  
4 wall.

1 13. A golf club head according to claim 1, wherein said heel  
2 wall has a thickness of 0.3 mm to 2 mm.

1 14. A golf club head according to claim 1, wherein a width  
2 of said first hollow portion adjacent to said sole portion is  
3 wider than a width of said first hollow portion adjacent to  
4 said top portion.

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1 15. A golf club head according to claim 1, wherein an edge  
2 is formed between said sole portion and said heel wall. at a  
3 heel side near than at least said shaft securing portion.

1 16. A golf club head according to claim 1, wherein a first  
2 upper end of the inside portion of said toe portion is higher  
3 than a second upper end of the inside portion of said heel  
4 portion in a cross section passing through an axis of said shaft  
5 securing hole and along said face portion.

1 17. A golf club head according to claim 1, wherein a support  
2 portion connects said shaft securing portion and said heel wall.

1 18. A golf club head according to claim 1, wherein a hosel  
2 portion is formed at said top portion of said head body by  
3 projecting said shaft securing portion from said top portion.

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1 19. A Golf club head according to claim 1, wherein an upper  
2 end portion of said shaft securing portion is provided lower  
3 than a top of said top portion.

1 20. A golf club head according to claim 1, wherein said head  
2 body is formed from  $\beta$ -type titanium alloy.

1 21. A golf club head according to claim 2, wherein said head  
2 body is formed from  $\alpha\beta$ -type titanium alloy, and said face  
3 portion is formed from  $\beta$ -type titanium alloy.

1 22. A method of manufacturing a cast head body of a hollow  
2 golf club head including a shaft securing portion extending  
3 from a top portion to a sole portion and a hollow portion between  
4 said shaft securing portion and a heel wall, wherein a mold  
5 piece for forming said hollow portion is interposed between  
6 portions corresponding respectively to said shaft securing  
7 portion and said heel wall.

1 23. A method of manufacturing a head body of a hollow golf  
2 club head according to claim 22, wherein said mold piece is  
3 formed integrally with a lower head body mold member for molding  
4 an outside of said head body.

1 24. A method of manufacturing a head body of a hollow golf  
2 club head according to claim 22, wherein said mold piece is

3 individual from a lower head body mold member for molding an  
4 outside of said head body.

1 25. A method of manufacturing a head body of a hollow golf  
2 club head according to claim 24, wherein said mold piece  
3 includes a face mold piece and a back mold piece, said face  
4 mold piece molds said hollow portion adjacent to a face opening  
5 portion, and said back mold piece located to a rear side of  
6 said face mold piece.

1 26. A method of manufacturing a head body of a hollow golf  
2 club head according to claim 24, wherein a hole or a cut portion  
3 for extracting said mold piece is formed in said head body to  
4 be manufactured, and said mold piece is extracted in a direction  
5 through said hole or said cut portion, said direction is  
6 different from a direction of at least one core for molding  
7 said head body extracted.

1 27. A method of manufacturing a head body of a hollow golf  
2 club head according to claim 22, wherein said mold piece is  
3 fractured or dissolved when said mold piece is extracted.

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A4 1 28. A golf club head comprising:  
2 a head body constituted by a hollow outer shell;  
3 a shaft securing portion, provided with at least one of  
4 a top portion and a sole portion, formed by cast, ?  
5 the other of said top portion and said sole portion fixed

6 to said one of said top portion and said sole portion;  
7 wherein a hollow portion is provided between said hollow  
8 portion and a heel portion.

1 29. A golf club head according to claim 28, wherein a joining  
2 hole, for joining said shaft securing portion, is provided with  
3 the other of said top portion and said sole portion.

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